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PATENT

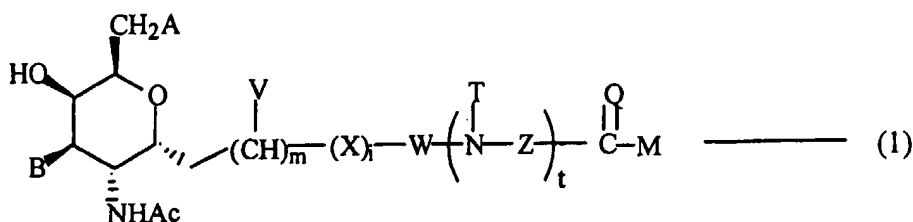
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: ) Group Art Unit: 1623  
)  
TOMIYAMA; UHEYAMA; YANAGIYA; ) Examiner: Michael C. Henry  
OHKURA )  
)  
Serial No. 09/925,537 )  
)  
Filed: August 10, 2001 )  
)  
For: **NON-MUCIN TYPE SYNTHETIC COMPOUNDS OR ITS CARRIER  
CONJUGATED COMPOUNDS**

APPENDIX A

Please amend the claims as indicated according to the July 30, 2003, revision to 37 C.F.R. § 1.121 concerning a manner for making claim amendments.

1. (Currently Amended) A compound of the general formula (1),



wherein

A represents OH or sialic acid and/or it's derivatives ; ~~and~~

B represents OH or galactose and/or it's derivatives;

T represents H or protecting groups of amine;

M represents H or OH;

2); X represents oxygen atom, -NH- or S(O)<sub>z</sub> (where z is 0, 1 or 2);

Q is H or oxygen atom and can be present or not present;

V represents lower alkyl or H;

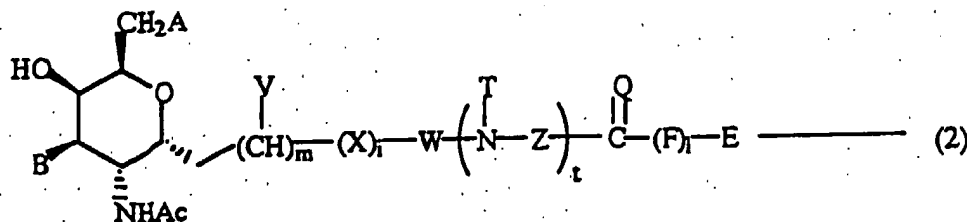
W is straight or branched alkylene groups from 0 to 5;

Z is straight or branched alkylene groups from 1 to 5; and

i, m, and t is 0 or 1 with the proviso that i and t cannot be both 0;

~~n-mucin type synthetic compounds or it's carrier conjugated compounds, which have above mentioned compounds as a core structure of antigen.~~

2. (Currently Amended) A compound of the general formula (2),



wherein A, B, T, X, Q, V, W, Z, i, m, and t have above mentioned meanings;

A represents OH or sialic acid and/or it's derivatives, and

B represents OH or galactose and/or it's derivatives;

T represents H or protecting groups of amine;

X represents oxygen atom, -NH- or S(O)<sub>z</sub> (where z is 0, 1 or

2);

Q is oxygen atom and can be present or not present;

V represents lower alkyl or H;

W is straight or branched alkylene groups from 0 to 5;

Z is straight or branched alkylene groups from 1 to 5;

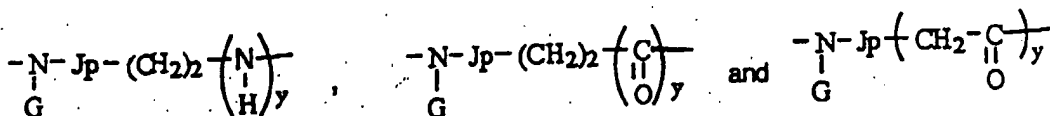
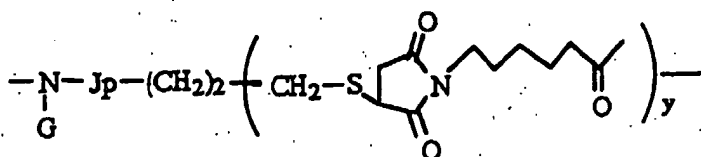
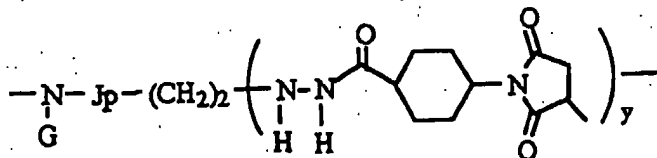
i, m, and t is 0 or 1 with the proviso that i and t cannot be

both 0;

E represents pharmaceutically acceptable carrier compounds;

l is 0 or 1;

F is showed followings,



J is  $\text{---CH}_2\text{CH}_2\text{X---}$  or  $\text{---N(L)---CH}_2\text{CO---}$  where X represents oxygen atom,  $\text{---NH---}$  or  $\text{S(O)}_z$  (where z is 0, 1 or 2);

~~(where X have above mentioned meanings;~~

L is H or lower alkyl + ;

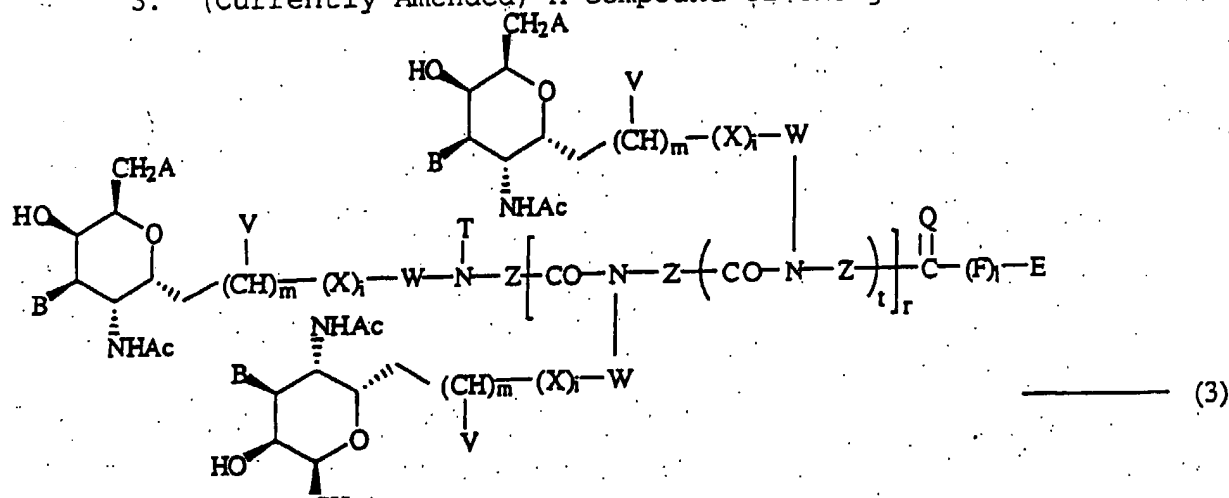
G is H or lower alkyl;

p is 0 to 3; and

y is 0 or 1 +

~~non-mucin type synthetic compounds or it's carrier conjugated compounds, which have above compounds as a core structure of antigen.~~

3. (Currently Amended) A compound of the general formula (3),



wherein A, B, T, X, Q, V, W, Z, i, m, t, E, and l have above mentioned meanings;

A represents OH or sialic acid and/or it's derivatives, and

B represents OH or galactose and/or it's derivatives;

T represents H or protecting groups of amine;

X represents oxygen atom, -NH- or S(O)<sub>2</sub> (where z is 0, 1 or

2);

Q is oxygen atom and can be present or not present;

V represents lower alkyl or H;

W is straight or branched alkylene groups from 0 to 5;

Z is straight or branched alkylene groups from 1 to 5;

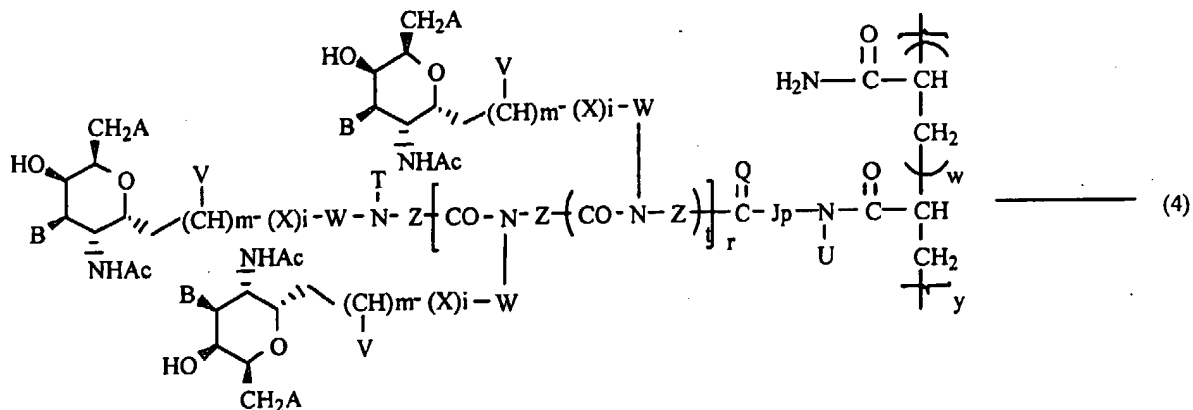
i, m, and t is 0 or 1;

E represents pharmaceutically acceptable carrier compounds;

l is 0 or 1; and

~~r is from 1 to 4, non-mucin type synthetic compounds or it's carrier conjugated compounds, which have above compounds as a core structure of antigen.~~

4. (Currently Amended) A compound of the general formula (4),



~~wherein A, B, T, X, Q, V, W, Z, J, i, m, t, p, and r, have above-mentioned meanings;~~

A represents OH or sialic acid and/or it's derivatives, and

B represents OH or galactose and/or it's derivatives;

T represents H or protecting groups of amine;

X represents oxygen atom, -NH- or S(O)<sub>z</sub> (where z is 0, 1 or

2);

Q is oxygen atom and can be present or not present;

V represents lower alkyl or H;

W is straight or branched alkylene groups from 0 to 5;

Z is straight or branched alkylene groups from 1 to 5;

J is  $-\text{CH}_2\text{CH}_2\text{X}-$  or  $-\text{N}(\text{L})-\text{CH}_2\text{CO}-$  where X represents oxygen atom,

$-\text{NH}-$  or  $\text{S}(\text{O})_z$  (where z is 0, 1 or 2);

i, m, and t is 0 or 1;

p is 0 to 3;

r is from 1 to 4;

U represents H or lower alkyl;

w is 0 to 50; and

y is 1 or 50.

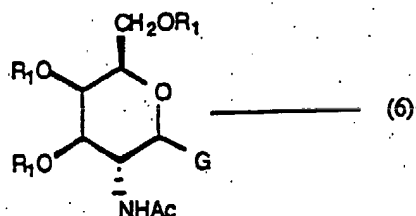
5. (Canceled)

6. (Canceled)

7. (Canceled)

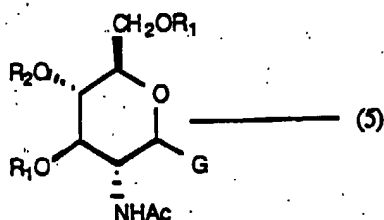
8. (Withdrawn) A process for the preparation of a galactopyranose, which propaty of inversion of  $\text{OR}_2$  to  $\text{OR}_1$  in above

mentioned glucopyranose derivatives to obtain a compound of the general formula (6)



wherein R<sub>1</sub> is H or a protecting group, such as acetyl, of a hydroxy group; G is allyl or a protected hydroxyl group,

comprising inverting stereochemically OR<sub>2</sub> of general formula (5)



wherein OR<sub>1</sub> is H or protecting group of a hydroxy group such as acetyl group; R<sub>2</sub> is leaving group such as tosylate, trifluoromesylate or methanesulfonate; G is allyl or protected hydroxyl group.

9. (Canceled)
10. (Canceled)
11. (Canceled)
12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 1, wherein A is  
sialic acid and/or its derivatives and B is OH.

18. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 2, wherein A is  
sialic acid and/or its derivatives and B is OH.

19. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 3, wherein A is  
sialic acid and/or its derivatives and B is OH.

20. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 4, wherein A is  
sialic acid and/or its derivatives and B is OH.

21. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 1, wherein A is OH



and B is galactose and/or its derivatives.

22. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 2, wherein A is OH  
and B is galactose and/or its derivatives.

23. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 3, wherein A is OH  
and B is galactose and/or its derivatives

24. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 4, wherein A is OH  
and B is galactose and/or its derivatives

25. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 1, wherein both A  
and B are OH.

26. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 2, wherein both A  
and B are OH.

27. (Currently Amended) The ~~non-mucin type synthetic compound~~

~~or carrier conjugated~~ compound thereof of claim 3, wherein both A and B are OH.

28. (Currently Amended) The ~~non-mucin type synthetic compound~~  
~~or carrier conjugated~~ compound thereof of claim 4, wherein both A and B are OH.

29. (Withdrawn) Immunotherapy using the non-mucin type  
synthetic compound or carrier conjugated compound thereof of claim  
1.

30. (Withdrawn) Immunotherapy using the non-mucin type  
synthetic compound or carrier conjugated compound thereof of claim  
2.

31. (Withdrawn) Immunotherapy using the non-mucin type  
synthetic compound or carrier conjugated compound thereof of claim  
3.

32. (Withdrawn) Immunotherapy using the non-mucin type  
synthetic compound or carrier conjugated compound thereof of claim  
4.

33. (Withdrawn) Monoclonal antibodies prepared using the non-

mucin type synthetic compound or carrier conjugated compound thereof of claim 1.

34. (Withdrawn) Monoclonal antibodies prepared using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 2.

35. (Withdrawn) Monoclonal antibodies prepared using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 3.

36. (Withdrawn) Monoclonal antibodies prepared using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 4.

37. (Withdrawn) Antitumor agents containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 1 as an active ingredient.

38. (Withdrawn) Antitumor agents containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 2 as an active ingredient.

39. (Withdrawn) Antitumor agents containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 3 as an active ingredient.

40. (Withdrawn) Antitumor agents containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 4 as an active ingredient.

41. (Withdrawn) Tumor immunostimulant containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 1 as an active ingredient.

42. (Withdrawn) Tumor immunostimulant containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 2 as an active ingredient.

43. (Withdrawn) Tumor immunostimulant containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 3 as an active ingredient.

44. (Withdrawn) Tumor immunostimulant containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 4 as an active ingredient.

45. (Withdrawn) Anti human immunodeficiency virus (HIV) agents containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 1 as an active ingredient.

46. (Withdrawn) Anti human immunodeficiency virus (HIV) agents containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 2 as an active ingredient.

47. (Withdrawn) Anti human immunodeficiency virus (HIV) agents containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 3 as an active ingredient.

48. (Withdrawn) Anti human immunodeficiency virus (HIV) agents containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 4 as an active ingredient.

49. (Withdrawn) An immunostimulant for human immunodeficiency virus (HIV) containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 1 as an active ingredient.

50. (Withdrawn) An immunostimulant for human immunodeficiency

virus (HIV) containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 2 as an active ingredient.

51. (Withdrawn) An immunostimulant for human immunodeficiency virus (HIV) containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 3 as an active ingredient.

52. (Withdrawn) An immunostimulant for human immunodeficiency virus (HIV) containing the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 4 as an active ingredient.

53. (Withdrawn) A therapeutic method for tumor treatment using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 1 as an active ingredient.

54. (Withdrawn) A therapeutic method for tumor treatment using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 2 as an active ingredient.

55. (Withdrawn) A therapeutic method for tumor treatment

using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 3 as an active ingredient.

56. (Withdrawn) A therapeutic method for tumor treatment using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 4 as an active ingredient.

57. (Withdrawn) A therapeutic method for treatment of HIV using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 1 as an active ingredient.

58. (Withdrawn) A therapeutic method for treatment of HIV using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 2 as an active ingredient.

59. (Withdrawn) A therapeutic method for treatment of HIV using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 3 as an active ingredient.

60. (Withdrawn) A therapeutic method for treatment of HIV using the non-mucin type synthetic compound or carrier conjugated compound thereof of claim 4 as an active ingredient.

61. (New) The compound of the general formula (1) of claim 1, further comprising a pharmaceutically acceptable carrier conjugated to said compound of the general formula (1).